



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lieutenant Governor

IAN A. BOWLES  
Secretary

LAURIE BURT  
Commissioner

MassDEP  
Bureau of Waste Prevention

Response To Comments On:

310 CMR 7.70  
“Massachusetts CO<sub>2</sub> Budget Trading Program”

and Amendments to:

310 CMR 7.29  
“Emissions Standards for Power Plants”

and

310 CMR 7.00: Appendix B(7)  
“Emission Banking, Trading, and Averaging”

Regulatory Authority:  
M.G.L. c. 111, Sections 142A through 142E

December 2007

## Table of Contents

Table of Contents.....	2
I. Regulation History and Notes.....	3
II. Public Comment Process.....	4
III. Comments and Responses.....	5
A. 310 CMR 7.29 and 310 CMR 7.00 Appendix B(7) (Amendments).....	5
B. 310 CMR 7.70: Massachusetts CO2 Budget Trading Program .....	8
1. Applicability .....	8
2. Size and Structure of the Cap.....	10
3. Allocation.....	11
4. Temporal Flexibility Mechanisms .....	12
5. Offsets (General Comments) .....	13
6. Offsets (Specific Categories) .....	14
7. Allowance Retirements for Voluntary Purchases of Renewable Energy .....	16
8. Economic Impact and Cost Controls .....	17
9. Imports and Leakage.....	18
10. Coordination with other State and Federal Programs .....	19
11. Allowance Tracking Accounts.....	20
12. Monitoring .....	20
IV. List of Commenters .....	31
A. Organizations .....	31
B. Massachusetts State Legislators .....	31
C. Unaffiliated Citizens .....	31

## I. Regulation History and Notes

In August of 2007, the Massachusetts Department of Environmental Protection (MassDEP) proposed replacement of the CO<sub>2</sub> emissions standards of 310 Code of Massachusetts Regulations (CMR) 7.29: *Emissions Standards for Power Plants* with the CO<sub>2</sub> requirements of 310 CMR 7.70: *Massachusetts CO<sub>2</sub> Budget Trading Program*<sup>1</sup>. Corresponding amendments to 310 CMR 7.00: Appendix B(7) and 310 CMR 7.29 were also proposed, and a Technical Support Document was published.

The Massachusetts CO<sub>2</sub> Budget Trading Program establishes a cap-and-trade program to regulate emissions of CO<sub>2</sub> that occur after January 1, 2009 from fossil-fuel-fired units that serve an electric generator with a nameplate capacity of 25 megawatts (MW) or greater.

These amendments to 310 CMR 7.29 and 310 CMR 7.00: Appendix B(7) are intended to provide for an orderly transition to the Massachusetts CO<sub>2</sub> Budget Trading Program. These amendments to 310 CMR 7.29 and Appendix B(7) will terminate the CO<sub>2</sub> requirements of 310 CMR 7.29 on December 31, 2008 and terminate the *Greenhouse Gas Credit Banking and Trading Program*<sup>2</sup> in 2013. These amendments also facilitate the transition by combining and postponing the final compliance date for 310 CMR 7.29 until September 1, 2009, expanding the geographic scope for the creation of GHG Credits, and allowing for the limited exchange of GHG Credits for CO<sub>2</sub> allowances.

---

<sup>1</sup> The *MA CO<sub>2</sub> Budget Trading Program* implements the CO<sub>2</sub> Budget Trading Program in MA. The CO<sub>2</sub> Budget Trading Program is often referred to, in other contexts, as the Regional Greenhouse Gas Initiative (RGGI). Throughout this document, the terms CO<sub>2</sub> allowances and CO<sub>2</sub> offset allowances refer to allowances that can be used to comply with the state-specific requirements of the CO<sub>2</sub> Budget Trading Program in any participating state.

<sup>2</sup> The *Greenhouse Gas Credit Banking and Trading Program*, established in 310 CMR Appendix B(7), allows for the creation of GHG (Greenhouse Gas) Credits. GHG Credits can be created for emission reduction, avoided emission or sequestered emission projects and can be used for compliance with the CO<sub>2</sub> limits established in 310 CMR 7.29: *Emissions Standards for Power Plants*, or exchanged for CO<sub>2</sub> allowances in accordance with the exchange provisions established in 310 CMR 7.70(5)(c) and amendments to 310 CMR 7.00 Appendix B(7).

## **II. Public Comment Process**

MassDEP held four public hearings and solicited written testimony on the proposed regulations in accordance with Massachusetts General Laws (MGL) Chapter 30A. On August 10, 2007, MassDEP published notice of the public hearings and public comment period on the proposed regulations and amendments in the Springfield Republican and the Boston Globe, and notified interested parties via electronic mail. Public hearings were held on the dates and at the Massachusetts locations specified below. The public comment period closed on September 24, 2007.

Hearings Held:           Monday, September 10, 2007 in Wilmington

Tuesday, September 11, 2007 in Lakeville

Tuesday, September 11, 2007 in Holyoke

Wednesday, September 12, 2007 in Boston

This document summarizes and responds to major comments that were received during the public comment period. MassDEP appreciates the input from those who testified at the public hearings and submitted written comments into the hearing docket. A full list of commenters is listed at the end of this document.

### III. Comments and Responses

#### A. 310 CMR 7.29 and 310 CMR 7.00 Appendix B(7) (Amendments)

**Comment:** One commenter indicated that it has experienced difficulty procuring GHG Credits<sup>3</sup> and recommended that MassDEP extend the deadlines for affected facilities to demonstrate compliance with 310 CMR 7.29 CO<sub>2</sub> standards until 2012 since the market has been unable to produce GHG Credits. (Dominion)

**Response:** MassDEP has retained its proposal to postpone and combine the 2007 and 2008 CO<sub>2</sub> compliance demonstration deadlines from January 30, 2008 and 2009 to September 1, 2009. As discussed in the Technical Support Document, this timeline will help reduce the administrative burden on MassDEP and the regulated facilities. MassDEP has also taken two additional steps to provide compliance options to the facilities regulated pursuant to 310 CMR 7.29. First, through amendments to 310 CMR 7.00: Appendix B(7), MassDEP is expanding the geographic area within which projects must be located in order to qualify for GHG Credits for reduced, avoided, or sequestered emissions of GHGs from the region<sup>4</sup> to the entire United States. Second, as noticed in the Environmental Monitor on December 24, 2007, MassDEP is proposing to allow facilities to demonstrate compliance by paying into the GHG Expendable Trust<sup>5</sup>, in accordance with 310 CMR 7.00 Appendix B(7)(d)6. MassDEP has concluded that these changes will provide sufficient compliance flexibility for affected facilities, and that it is not necessary to extend the deadline for affected facilities to demonstrate compliance beyond September 2009.

**Comment:** One commenter stated that MassDEP should keep 310 CMR 7.29 in place until the MA CO<sub>2</sub> Budget Trading Program has successfully commenced (Clean Water Action), while another suggested that the provisions of 7.29 should be structured to automatically “sunset” upon the commencement of the Massachusetts CO<sub>2</sub> Budget Trading Program (NRG). A third commenter suggested that MassDEP repeal the CO<sub>2</sub> rate provisions of 310 CMR 7.29 before they take effect on January 1, 2008 (Dominion). Several commenters expressed general support for MassDEP’s proposal to end the CO<sub>2</sub> provisions of 310 CMR 7.29 with the implementation of 310 CMR 7.70 on January 1, 2009 (FPL, Northeast GHG Coalition, Dominion).

**Response:** As proposed, MassDEP is retaining 310 CMR 7.29’s CO<sub>2</sub> emissions cap standards for 2007 and 2008, and its CO<sub>2</sub> emissions rate standards for 2008. The CO<sub>2</sub> emissions standards of 310 CMR 7.29 will be replaced by the cap-and-trade provisions of the Massachusetts CO<sub>2</sub>

---

<sup>3</sup> A GHG Credit is “a credit based on an amount of emission reductions, avoided emissions or sequestered emissions of a GHG. One GHG Credit has an assigned value of one ton of carbon dioxide equivalent. GHG Credits shall be expressed in whole tons. When certifying or verifying GHG Credits, the number of GHG Credits is rounded down for decimals less than 0.5 and rounded up for decimals of 0.5 or greater,” as defined in 310 CMR 7.00 Appendix B(7)(b).

<sup>4</sup> The original geographic scope for GHG Credit projects included Connecticut, Delaware, Maine, Massachusetts, Maryland, New Hampshire, New Jersey, New York, and Vermont.

<sup>5</sup>The GHG Expendable Trust is “the trust established pursuant to 801 CMR 50.00 for the purpose of providing a separate segregated interest-bearing account for the receipt of payments made pursuant to 310 CMR 7.00: Appendix B(7)(d)5,” as defined in 310 CMR 7.00 Appendix B(7)(b).

Budget Trading Program beginning on January 1, 2009. This schedule will ensure continuity in MassDEP's effort to regulate CO<sub>2</sub> emissions from electric generating units.

**Comment:** One commenter noticed that 310 CMR 7.00 Appendix B(7)(d)5.c., which provides for payments into the GHG Expendable Trust, was not included in the proposed amendments. The commenter requested confirmation that MassDEP does not intend to eliminate 310 CMR 7.00 Appendix B(7)(d)5.c. (NRG).

**Response:** MassDEP is not eliminating or amending 310 CMR 7.00, Appendix B (7)(d)5.c.

**Comment:** One commenter requested that MassDEP extend the proposed deadline to receive exchangeable GHG Credits under 310 CMR 7.29 for CO<sub>2</sub> Budget Trading Program<sup>6</sup> CO<sub>2</sub> allowances<sup>7</sup> beyond December 31, 2012. The commenter noted that this timeframe is shorter than the ten-year or twenty-year allocation period for offset projects under the MA CO<sub>2</sub> Budget Trading Program (Dominion). Another commenter requested that MassDEP move the proposed deadline for the creation of exchangeable GHG Credits forward to correlate with the end of the first three-year compliance period under the MA CO<sub>2</sub> Budget Trading Program on December 31, 2011. This commenter also asserted that the application deadlines for establishing project eligibility for GHG Credit exchange are too lenient and will encourage more ineligible GHG Credits to be created for compliance with 310 CMR 7.70 and not 310 CMR 7.29. (Environment Northeast)

**Response:** MassDEP is retaining the proposed December 31, 2012 deadline for the verification of GHG Credits that may be exchanged for CO<sub>2</sub> allowances under the MA CO<sub>2</sub> Budget Trading Program. The purpose of this exchange is to compensate those who invested in projects because of the GHG Credit program without creating an alternative means to acquire CO<sub>2</sub> Budget Trading Program CO<sub>2</sub> allowances. MassDEP has concluded that the 2012 deadline balances these two objectives. Consistent with the Department's intent to have an orderly transition to the MA CO<sub>2</sub> Budget Trading Program, MassDEP is finalizing the amendments to 310 CMR 7.00 Appendix B(7) to clarify that applications for certification of GHG Credits that are received after the effective date of these regulations will not result in the creation of GHG Credits that can be exchanged for CO<sub>2</sub> allowances.

**Comment:** Regarding the exchange of GHG Credits for CO<sub>2</sub> allowances, several commenters asserted that GHG Credits should not be discounted at a ratio of 2 to 1, and that there should be a 1 to 1 recognition for such investments that reduce, sequester or avoid greenhouse gas emissions (Dominion, Northeast GHG Coalition, Entergy). According to one of these commenters, the 2 to 1 discount for GHG Credits is contrary to development of a national cap and trade program, and such a policy would also discriminate against offset projects that meet all the key criteria for an environmentally beneficial project, such as real, measurable, verifiable GHG reductions (Northeast GHG Coalition). One commenter expressed support for the proposal to exchange one CO<sub>2</sub>

---

<sup>6</sup> The CO<sub>2</sub> Budget Trading Program is "a multi-state CO<sub>2</sub> air pollution control and emissions reduction program established by regulation in several states, including Massachusetts pursuant to 310 CMR 7.70, for the purpose of reducing emissions of CO<sub>2</sub> from CO<sub>2</sub> budget sources," as defined in 310 CMR 7.70(1)(b).

<sup>7</sup> A CO<sub>2</sub> allowance is a "limited authorization by the Department or a participating state under the CO<sub>2</sub> Budget Trading Program to emit up to one ton of CO<sub>2</sub>, subject to all applicable limitations contained in 310 CMR 7.70," as defined in 310 CMR 7.70(1)(b).

allowance for every two GHG Credits (Environment Northeast).

**Response:** A 2 to 1 exchange ratio was chosen because GHG Credits are not equivalent to CO<sub>2</sub> offset allowances<sup>8</sup> or CO<sub>2</sub> allowances, and because this ratio strikes an appropriate balance between recognizing investments in GHG Credit-generating projects and achieving the full benefits of the MA CO<sub>2</sub> Budget Trading Program. MassDEP is therefore finalizing its proposal to discount GHG Credits at a ratio of 2 to 1.

**Comment:** One commenter suggested that the exchange provisions unfairly favor MA CO<sub>2</sub> Budget Trading Program-ineligible projects. While GHG Credits earned by such projects may be exchanged for CO<sub>2</sub> allowances, GHG Credits earned by MA CO<sub>2</sub> Budget Trading Program-eligible projects may only be exchanged for CO<sub>2</sub> offset allowances, the use of which is constrained (NRG).

**Response:** MassDEP has concluded that its proposal does not disadvantage MA CO<sub>2</sub> Budget Trading Program-eligible projects. MA CO<sub>2</sub> Budget Trading Program-eligible projects will be able to apply for CO<sub>2</sub> offset allowances at an undiscounted rate of one CO<sub>2</sub> offset allowance for each GHG Credit. This option will adequately reward investment in eligible projects. MassDEP is allowing the exchange of GHG Credits from MA CO<sub>2</sub> Budget Trading Program-eligible projects for CO<sub>2</sub> offset allowances to encourage MA CO<sub>2</sub> Budget Trading Program-eligible projects to participate in the GHG Credit market, instead of simply waiting for a market to develop for the CO<sub>2</sub> Budget Trading Program.

**Comment:** One commenter suggested that MassDEP amend the final regulation to cap the Greenhouse Gas Credit Exchange Set-aside at 1% of the MA CO<sub>2</sub> Budget Trading Program base budget,<sup>9</sup> or 266,602 CO<sub>2</sub> allowances (Environment Northeast).

**Response:** As proposed, MassDEP will allocate sufficient CO<sub>2</sub> allowances to the Greenhouse Gas Credits Exchange Set-aside to cover the exchange of all unused GHG Credits from MA CO<sub>2</sub> Budget Trading Program-ineligible projects for CO<sub>2</sub> allowances at a 2:1 ratio. The reference to 266,602 CO<sub>2</sub> allowances was included in the Technical Support Document to illustrate the likely magnitude of the program, and not to imply that the number of allowances available for exchange would be limited.

**Comment:** One commenter requested clarification regarding the proposal to allow the exchange of GHG Credits for CO<sub>2</sub> Budget Trading Program CO<sub>2</sub> allowances. The commenter stated, “It appears that DEP intended for proposed 310 CMR 7.70(10)(c)(4)(e) and related provisions to ensure that only RGGI eligible offset projects would receive RGGI allowance credit – a vital

---

<sup>8</sup> A CO<sub>2</sub> offset allowance is a “CO<sub>2</sub> allowance that is awarded to the sponsor of a CO<sub>2</sub> emissions offset project pursuant to 310 CMR 7.70(10)(g) and is subject to the relevant compliance deduction limitations of 310 CMR 7.70(6)(e)1.c.,” as defined in 310 CMR 7.70(1)(b).

<sup>9</sup> The Massachusetts CO<sub>2</sub> Budget Trading Program base budget is “the annual amount of CO<sub>2</sub> tons available in Massachusetts for allocation in a given allocation year, in accordance with the CO<sub>2</sub> Budget Trading Program. CO<sub>2</sub> offset allowances awarded pursuant to 310 CMR 7.70(10) and Early Reduction CO<sub>2</sub> Allowances awarded pursuant to 310 CMR 7.70(5)(c)2. are separate from and additional to CO<sub>2</sub> allowances allocated from the Massachusetts CO<sub>2</sub> Budget Trading Program Base Budget,” as defined in 310 CMR 7.70(1)(b).

concern as allowing other sources of offsets to earn offset (and thereby allowance) credit would undermine the entire regional program.” (CLF)

**Response:** MassDEP did not intend to entirely prevent projects that do not meet the requirements of 310 CMR 7.70 from earning CO<sub>2</sub> Budget Trading Program CO<sub>2</sub> allowances; in fact, the 2:1 exchange provisions in 310 CMR 7.00 Appendix B(7) and 310 CMR 7.70 explicitly allow for this to occur through direct allocations of CO<sub>2</sub> allowances. These allocations are necessary to provide a fair return on investment for projects that were initiated for the purpose of complying with the CO<sub>2</sub> provisions of 310 CMR 7.29. MassDEP also notes that the CO<sub>2</sub> allowances which will be exchanged are included in the MA CO<sub>2</sub> Budget Trading Program base budget; therefore the exchange program will not undermine the environmental objectives of the CO<sub>2</sub> Budget Trading Program by expanding the cap. It is true, however, that only projects that meet the requirements of 310 CMR 7.70(10) can earn CO<sub>2</sub> offset allowances, and that any project that meets the requirements of 310 CMR 7.70(10) can earn CO<sub>2</sub> offset allowances unless the reduced, avoided, or sequestered emissions have already been used for compliance with the CO<sub>2</sub> provisions of 310 CMR 7.29. These exchange provisions will provide for a smooth transition from the GHG Credit program to the MA CO<sub>2</sub> Budget Trading Program. MassDEP also notes that GHG Credit applications received after the effective date of these regulations will not generate GHG Credits that can be exchanged for CO<sub>2</sub> allowances.

**Comment:** Several commenters expressed concern about the supply of GHG Credits available for compliance with 310 CMR 7.29. Specifically, it was requested that the geographic scope be expanded and that payments into the GHG Trust be allowed as soon as possible (FirstLight, Dominion).

**Response:** Provisions allowing MassDEP to accept payments into the GHG Expendable Trust under certain conditions are retained in the final regulation, and the geographic scope in which emission reduction, avoided emission, or sequestered emission projects can be located is also expanded to the entire United States. In addition, as noticed in the Environmental Monitor on December 24, 2007, MassDEP is proposing to allow payments into the GHG Expendable Trust, in accordance with 310 CMR 7.00 Appendix B(7)(d)6. Furthermore, MassDEP intends to propose, early in 2008, additional amendments to 310 CMR 7.00 Appendix B(7) that will clarify the process and requirements by which emission reduction, avoided emission or sequestered emission projects located outside of the United States may, under certain conditions, be used for compliance with the CO<sub>2</sub> emissions standards of 310 CMR 7.29. The date by which MassDEP must annually evaluate the availability and price of GHG Credits is therefore being postponed from February 15 to June 1 to allow time for the development of these amendments. As an additional point of clarification, MassDEP notes that these actions shall have no effect on whether or not MassDEP determines, in accordance with 310 CMR 7.00 Appendix B(7)(d)4., that insufficient GHG Credits are available for 2007 on or before June 1, 2008, and should not be interpreted as any indication of whether or not MassDEP shall make such finding.

## **B. 310 CMR 7.70: Massachusetts CO<sub>2</sub> Budget Trading Program**

### **1. Applicability**

**Comment:** One commenter asserted that a cap and trade program to address carbon emissions



should cover all CO<sub>2</sub> sources (Mirant). Another suggested that methane emissions from landfills should be included, and that the purpose should be revised to acknowledge life cycle emissions of six GHG gases (Covanta).

**Response:** The purpose of the MA CO<sub>2</sub> Budget Trading Program is to control CO<sub>2</sub> emissions associated with the generation of electricity. MassDEP acknowledges that adequately addressing the climate problem will eventually require economy-wide regulation of greenhouse gas emissions. The MA CO<sub>2</sub> Budget Trading Program represents a first step.

**Comment:** A number of comments were received regarding the definition of “eligible biomass”<sup>10</sup>. Many requested that the definition be clarified, and specific objections were raised regarding the phrases “energy crops,” “sustainably harvested,” and “old growth” (H2 Diesel, Environment Northeast). Some commenters argued that such terms should be tightly defined to exclude fuels that do not fully meet the standards (Environment Northeast, CLF). Others argued for a less restrictive definition to encourage the use of biomass fuels and processes (NE Biofuels Collaborative, Senator Morrissey and Representative Dempsey, Northeast GHG Coalition, Bob Machaver, FirstLight, Covanta), in several cases providing specific examples of fuels that could be excluded under the proposed definition (NRG, H2 Diesel, International Paper Products). Several commenters requested that MassDEP broaden the definition to be consistent with the Division of Energy Resource’s Renewable Portfolio Standard regulations, or to include any biomass fuel that has been approved by MassDEP through a Beneficial Use Determination (NRG, Dominion, Senator Menard).

**Response:** MassDEP has concluded that the proposed definition of eligible biomass correctly balances the need to acknowledge CO<sub>2</sub> emissions benefits associated with the substitution of certain biomass fuels for fossil fuels with the need to consider the full range of environmental impacts associated with biomass fuels. MassDEP acknowledges ongoing scientific and technological progress in addressing life-cycle CO<sub>2</sub> emissions associated with biomass fuels, and plans to work with other participating states<sup>11</sup> to develop additional guidance on this matter. However, MassDEP believes that the proposed definition of “eligible biomass” provides adequate direction to allow for implementation of the relevant provisions of the MA CO<sub>2</sub> Budget Trading Program.

**Comment:** “Liquid Biofuels” are listed as materials that qualify as “Eligible Biomass”; however there is no formula provided in 310 CMR 7.70(8)(g) to quantify the portion of the CO<sub>2</sub> emissions from these fuels that are of biomass origin. A formula should be added to 7.70(8)(g) to quantify the CO<sub>2</sub> emissions resulting from combustion of the “bio” portion of a liquid biofuel, so that these emission can be excluded from the CO<sub>2</sub> reconciliation process (i.e. do not have to be offset by CO<sub>2</sub> Allowances). It does not make sense to list biofuels as eligible biomass fuels, and then

---

<sup>10</sup> “Eligible biomass includes sustainably harvested woody and herbaceous fuel sources that are available on a renewable or recurring basis (excluding old-growth timber), including dedicated energy crops and trees, agricultural food and feed crop residues, aquatic plants, unadulterated wood and wood residues, animal wastes, other clean organic wastes not mixed with other solid wastes, biogas, and other neat liquid biofuels derived from such fuel sources. Sustainably harvested shall be determined by the Department,” as defined in 310 CMR 7.70(1)(b).

<sup>11</sup> A participating state is “a state that is a member of the CO<sub>2</sub> Budget Trading Program and has promulgated a regulation consistent with 310 CMR 7.70,” as defined in 310 CMR 7.70(1)(b).

provide no means to determine the CO<sub>2</sub> emissions attributable to the biomass fraction of these fuels. (Bob Machaver)

**Response:** The GHG emissions benefits of combusting liquid biofuels in place of fossil fuels can vary significantly due to the wide range of their production processes, and recent scientific efforts have not yet produced adequate methods to quantify these benefits for specific fuels. Therefore, MassDEP has revised the definition of eligible biomass so that it no longer includes liquid biomass fuels. This means that CO<sub>2</sub> emissions associated with the combustion of liquid biofuels cannot be deducted from a facility's compliance obligation. However, MassDEP will continue to research this issue, along with other participating states, and may propose amendments to the definition of “eligible biomass” in the future.

**Comment:** One commenter requested that MassDEP revise its applicability criteria so that any unit will be exempt from the program if the fossil fuel combusted comprises no more than 50 percent of the annual heat input on a Btu basis during any year, regardless of whether that unit commenced operation before or after January 1, 2005. (FirstLight)

**Response:** MassDEP is finalizing the applicability requirements and definition of “fossil fuel fired” as proposed without modification. The language in the “fossil fuel fired” definition is intended to allow facilities that burn a significant portion of biomass to be excluded from the MA CO<sub>2</sub> Budget Trading Program. The January 1, 2005 date was intended to differentiate between existing biomass facilities and new state of the art biomass facilities. For facilities operating prior to that date, the threshold was set at 50% in recognition of the fact that existing older biomass facilities may have difficulty obtaining the higher 95% threshold applied to newer state of the art facilities. Both the 50% and 95% thresholds are “once in always in” thresholds, meaning that if a facility ever exceeded or exceeds in the future the applicable threshold, that facility would be subject to the program. MassDEP points out that the monitoring section of the MA CO<sub>2</sub> Budget Trading Program provides for quantification of CO<sub>2</sub> emissions from eligible biomass, and that the emissions from eligible biomass are not included in the calculations to determine the facility’s compliance obligation.

## **2. Size and Structure of the Cap**

**Comment:** On the basis of recent emissions data, several commenters concluded that the base budget is too high to drive actual reductions in CO<sub>2</sub> emissions (UCS, MA Sierra Club, Environment Northeast, Environmental Entrepreneurs). Others argued that the base budget is too small to account for expected demand growth (AIM, MA Food Association, Retailers Association of MA, Boston Real Estate Board, NRG), or that it should have been set higher using 1990 emissions data, a baseline used in various other contexts (Senators Morrissey and Dempsey, James Smith, AIM).

**Response:** The MA CO<sub>2</sub> Budget Trading Program initially aims to stabilize emissions from 2009 through 2014 at a level roughly equivalent to historical emissions, and the base budget was established to be consistent with this goal. The most recent emissions estimates that were available at the time were used in setting the base budget, and MassDEP does not believe that it is appropriate to revisit it at this time.

### **3. Allocation**

**Comment:** One commenter stated that the MA Energy Facilities Siting Board (EFSB) has previously required some new facilities to offset CO<sub>2</sub> emissions and suggested that direct allocations of CO<sub>2</sub> Budget Trading Program CO<sub>2</sub> allowances be made to those facilities corresponding to emissions that have already been offset (Millennium).

**Response:** The EFSB requirements mandate that only a very small percentage (1 %) of a new energy facility's CO<sub>2</sub> emissions be offset for a twenty-year period. MassDEP also notes that new major sources of nitrogen oxide emissions are required to offset more than 100% of the facility's potential emissions, and that those same facilities are not given special consideration under any of MassDEP's cap-and-trade programs for nitrogen oxide emissions. Therefore, MassDEP has concluded that there is no need to allocate CO<sub>2</sub> allowances to facilities that have been required to offset CO<sub>2</sub> emissions by the EFSB.

**Comment:** One commenter requested that "the regulations allow for the establishment of a flexible mechanism for state agencies and authorities to obtain CO<sub>2</sub> allowances." Specifically, the commenter asserted that "the MBTA would not be able to participate in a multi-state auction or a state run auction where allowances are sold," and that expenses incurred through auctions may not be consistent with a "statutorily-imposed Forward-Funding backdrop" which requires "fiscally responsible purchases." (MBTA)

**Response:** Public and quasi-public authorities and agencies will have the ability to purchase CO<sub>2</sub> allowances at auction or through secondary markets, in the same way as all other facilities regulated under 310 CMR 7.70. MassDEP believes it is important for the Commonwealth to lead by example and ensure that all facilities, including state agencies and state authorities, that are subject to 310 CMR 7.70 are subject to the same requirements as other affected facilities.

**Comment:** Several commenters expressed concern about MassDEP's plan to auction nearly all CO<sub>2</sub> allowances, especially in the first few years of the program (Business Council for Sustainable Energy, Entergy, NRG). These comments asserted that generators will raise prices to compensate for additional risk associated with the need to own CO<sub>2</sub> allowances, or even shut down if they are not confident that allowances will be available for compliance (Millennium, Representative Keenan, NRG). Several commenters proposed a gradual transition away from direct allocations as an acceptable compromise (MA Food Association, Retailers Association of MA, Boston Real Estate Board, Millennium, Representative Keenan). Many comments were received in support of the decision to auction allowances (Northeast CHP Initiative, UCS Environment MA, FPL, MA Sierra Club, National Grid, Ceres).

**Response:** The Regional Greenhouse Gas Initiative planning process provided a forum in which possible allocation methods, including output-based methods, were discussed extensively by stakeholders, academics, and regulators. After careful consideration of these discussions, MassDEP concluded that direct allocations are not necessary to ensure the ability of generators to obtain needed allowances. Regulations covering CO<sub>2</sub> allowance auctions have been proposed by MassDOER as 225 CMR 13.00. The first auction will occur prior to the commencement of the first control period, and multiple auctions during the first control period will provide additional opportunities to obtain CO<sub>2</sub> allowances. Therefore, MassDEP has concluded that

sources will have sufficient opportunities to purchase allowances through auctions and secondary markets.

**Comment:** Many comments about auction mechanisms and possible uses for auction proceeds were received by MassDEP (Business Council for Sustainable Energy, ISO NE, Representative Keenan, Senator Menard, Representative Haddad, Northeast GHG Coalition, MA Sierra Club, E2, MA DPU, Constellation, MA Food Association, Retailers Association of MA, Boston Real Estate Board).

**Response:** MassDEP's regulations provide for the allocation of CO<sub>2</sub> allowances to a Massachusetts Auction Account<sup>12</sup>, but they do not contain provisions that specify auction mechanisms or uses for proceeds. Regulations covering allowance auctions have been proposed by the MA Division of Energy Resources (DOER) as 225 CMR 13.00. Responses to these comments are being prepared by DOER.

#### **4. Temporal Flexibility Mechanisms**

**Comment:** One commenter pointed out that there is a minus sign missing between "AEERBASELINE" and "AEERERP" in the equation for Early Reduction Allowances. (Loreti)

**Response:** MassDEP agrees and thanks the commenter for pointing out the omission. A minus sign has been added to the final regulation.

**Comment:** Two commenters suggested that MassDEP remove provisions that create Early Reduction Allowances (UCS, Environment Northeast). One of these commenters explained: "In light of the emerging consensus among participating states that auctioning 100% of allowances is the right policy, such early reductions (along with the efficiency gains and/or cost-savings that motivated them) are their own reward, and ERAs would be an unnecessary compensation. Generators who have achieved such reductions since 2006 (the beginning of the proposed eligibility period) or may achieve them prior to RGGI's effective date of January 1, 2009, will have reduced their need to purchase allowances. Granting such allowances – particularly in light of indications that the regional cap may be too high to begin with – would run directly counter to RGGI's policy goal" (UCS).

**Response:** Early reductions may help smooth the path to compliance for all sources and reduce the overall costs of the program. The comment is correct to point out that some early actions, such as capital improvements that increase combustion efficiency, may lead to decreased compliance obligations in future years. However, there are other early actions, such as temporary fuel switching, that would otherwise not be rewarded. Rewards for early action also generally encourage early compliance with other MassDEP programs.

---

<sup>12</sup> The Massachusetts Auction Account is "an account administered by the Massachusetts Division of Energy Resources for purposes of auctioning CO<sub>2</sub> allowances," as defined in 310 CMR 7.70(1)(b).

## **5. Offsets (General Comments)**

**Comment:** Several commenters requested that MassDEP include a protocol for evaluating new offset categories (Millennium, FirstLight, Entergy). One commenter suggested that this protocol have broad standards for ownership and limited geographic restrictions, and should avoid overly burdensome additionality requirements that create uncertainty (Entergy). Other commenters made general requests that the regulation be revised to include additional categories, or that additional categories be added expeditiously after the promulgation of 310 CMR 7.70 to ensure that sufficient offset supply is available (ISO NE, FirstLight). Some commenters also proposed specific additional offset categories, including coal ash processing such as the current project at Brayton Point, urban tree planting projects, the use of co-generated steam to displace in-building combustion of fossil fuels, combined heat and power systems, gasification of biomass not included in the definition of eligible biomass, municipal solid waste combustion projects, methane emission reductions from the replacement of natural gas mains, strategic tree planting projects that mitigate building energy demands, the destruction of refrigerant gasses that are potent greenhouse gasses, efficiency upgrades at existing fossil fuel plants and hydro facilities, “municipal offset programs,” and projects that avoid emissions (Loreti, Millennium, Representative Haddad, NRG, FirstLight, ICLEI, National Grid, Neil Collins, Urban Ecology Institute, Northeast CHP Initiative, Mirant, Covanta, Entergy).

**Response:** The final rule does not include any categories beyond the five that were included in the original proposal. After extensive study during the Regional Greenhouse Gas Initiative’s planning process, the five project categories were selected with consideration of expected offset supply within the borders of participating states, the relative ease of developing standards, and the likelihood of mandatory greenhouse gas regulations for that sector. MassDEP will, however, continue to work toward the development of additional offset categories with the other participating states. Proposed categories will be evaluated based on the requirements included in 310 CMR 7.70(10). Specifically, MassDEP must be confident that any CO<sub>2</sub> offset allowances awarded from new offset categories meet the requirements of 310 CMR 7.70(10)(a) that offsets “represent CO<sub>2</sub> equivalent emission reductions or carbon sequestration that are real, additional, verifiable, enforceable, and permanent within the framework of a standards-based approach.”

**Comment:** One comment suggested that offsets provisions be adopted as a separate regulation to facilitate future amendments (Environment Northeast).

**Response:** Offsets provisions can be amended in the future even if they are included in the MA CO<sub>2</sub> Budget Trading Program regulations package.

**Comment:** Several comments encouraged MassDEP to increase the percentage of compliance obligations that can be met with CO<sub>2</sub> offset allowances (Mirant, Millennium).

**Response:** The option to use offsets for a small fraction of compliance obligations will provide flexibility to sources by allowing for the use of documented off-grid reductions to compensate for excess on-grid emissions. However, allowing offsets to be used to satisfy a larger fraction of a facility’s compliance obligation would undermine the program’s intent to ensure that some emissions reductions occur within the electric sector. MassDEP also notes that the regulation

includes provisions that allow for the use of offsets to meet increased percentages of compliance obligations after a period of sustained high allowance prices.

**Comments:** One commenter argued that prohibitions against offset projects that receive funding or other incentives through any system benefit fund, or through MA's CO<sub>2</sub> allowance auctions, are too broad and could exclude projects that have various environmental benefits, such as combined heat and power projects (Northeast CHP Initiative).

**Response:** MassDEP is finalizing the provisions that prohibit offset projects that receive funding or other incentives through any system benefit fund, or through MA's CO<sub>2</sub> allowance auctions, as proposed. MassDEP has concluded that these prohibitions, which are included as General Additionality Requirements, are necessary to ensure that CO<sub>2</sub> offset allowances are not awarded to projects that would have occurred without the offset provisions of the MA CO<sub>2</sub> Budget Trading Program.

**Comment:** One commenter requested that projects that retire CO<sub>2</sub> credits or allowances under other greenhouse gas programs should be eligible to receive CO<sub>2</sub> offset allowances. The commenter added that the regulations should not limit the ability of a project developer or investor to choose the program under which a project will receive CO<sub>2</sub> offset allowances or credits. (Entergy)

**Response:** Proposed and final regulations allow for the creation of CO<sub>2</sub> offset allowances through the retirement of allowances or credits from other greenhouse gas programs after the occurrence of a stage two trigger event.<sup>13</sup> The regulations do not place limits on the ability of a project developer to choose between programs, beyond those that are necessary to prevent double counting and those that constrain the geographic scope for offset projects. MassDEP has concluded that provisions that initially limit CO<sub>2</sub> offset applications to projects in participating states, or states that have signed relevant memoranda of understanding with all participating states, are desirable because they will maximize local economic and environmental co-benefits of offset projects and limit the administrative demands of the offset program. On the other hand, MassDEP has included the stage two trigger event mechanism, which allows for the acceptance of allowances or credits from other programs after a period of sustained high CO<sub>2</sub> allowance prices, to protect against the possibility that the demand for offset projects exceeds supply in the specified geographic area.

## **6. Offsets (Specific Categories)**

**Comment:** Two commenters requested clarification regarding end-use efficiency offset projects that include co-generation of steam and electricity. One commenter asked whether the general additionality requirements were intended to entirely exclude projects that include an electricity generation component, and another requested clarification that co-generation projects are allowed (Northeast CHP Initiative, Mirant).

---

<sup>13</sup> A stage two trigger event is "the occurrence of any twelve month period that completely transpires following the market settling period and is characterized by an average CO<sub>2</sub> allowance price that is equal to or greater than the stage two threshold price," as defined in 310 CMR 7.70(1)(b). The stage two trigger price is set at \$10 in 2005 dollars, and will be annually increased by 2% plus the annual percent change in the Consumer Price Index.

**Response:** MassDEP acknowledges that the general requirements and specific methodologies for co-generation and combined heat and power offset projects remains unclear, and plans to work with other participating states to develop further guidance on this issue in the future. Projects with an electric generation component may be eligible for CO<sub>2</sub> offset allowances provided that the project sponsor transfers to the Department or its agent legal rights to any and all attribute credits (other than the CO<sub>2</sub> offset allowances that would be awarded under 310 CMR 7.70(10)(g)) generated from the operation of the offset project that may be used for compliance with a renewable portfolio standard or other regulatory requirement.

**Comment:** One commenter requested clarification of methods for calculating offsets for fuel switching to a less carbon-intensive fuel for use in combustion systems, including the use of liquid or gaseous renewable fuels, as described in 310 CMR 7.70(10)(e)4.a.i.(vii). The commenter suggested that the proposed regulations were unclear about whether or not fuel-switching projects were eligible to receive CO<sub>2</sub> offset allowances according to the “end-use efficiency projects” criteria, and requested clearer methods for calculating the CO<sub>2</sub> offset allowances for which they are eligible. The commenter also expressed concern that the term “renewable fuels” was not clearly defined, and suggested that MassDEP adopt a definition of renewable fuels similar to the one used by New Jersey’s Renewable Portfolio Standard and dissimilar from the federal definition, which, in the commenter’s opinion, excludes some fuels with CO<sub>2</sub> benefits. (H2 Diesel)

**Response:** The calculation method provided can be used to calculate emissions reductions from fuel-switching projects. The formula for calculating emission reductions included in 310 CMR 7.70(10)4.d.ii. must be used for each fuel type; in the case of fuel switching there will be a decrease in emissions from the replaced fuel type, but there may be a smaller increase in emissions from a replacement fuel. The “emission reduction” associated with the replacement fuel will be a negative number and will therefore be subtracted from the emission reduction associated with the replaced fuel, yielding a positive net emissions reduction that accounts for changes in emissions associated with both fuels. For clarification, the regulation has been revised to replace the term “renewable fuel” with “eligible biomass.” For fuel-switching projects that use eligible biomass as a replacement fuel, calculations should be completed as for other fuels, but an Emissions Factor of 0.0 lbs. CO<sub>2</sub>/MMBtu should be used. Furthermore, MassDEP is replacing the phrase “renewable energy” with “solar and geothermal energy” to clarify which projects qualify under 310 CMR 7.70(10)4.a.i.(i) as “improvements in the energy efficiency of combustion equipment that provide space heating and hot water.”

**Comment:** One commenter argued that the method provided for calculating offsets for the destruction of methane gas from landfills should require projects to directly measure and account for oxidation factors, combustion efficiencies, and fugitive emissions over the life of the landfill. (Covanta)

**Response:** MassDEP has concluded that the methods described in the proposed regulations are sufficiently accurate to quantify emissions reductions associated with the destruction of methane gas from landfills. MassDEP is therefore finalizing the CO<sub>2</sub> emissions offset project standards for landfill gas as proposed.

**Comment:** One commenter requested that the definition of “market penetration rate” be “clarified to explicitly allow [MassDEP] to consider specific segments of a market” such as industrial, commercial, or residential market segments. (Northeast CHP Initiative)

**Response:** MassDEP has concluded that the definition of “market penetration rate” adequately balances the need to ensure that offset projects are “additional” with the need to provide a definition that will apply across a range of technologies and market characteristics. The definition allows MassDEP to consider specific segments of a market such as industrial, commercial, and residential.<sup>14</sup> MassDEP also notes that the regulations allow for the issuance of additional guidance in this area should it be appropriate in the future.

**Comment:** One commenter suggested that when evaluating offset projects, MassDEP apply the global warming potentials found in the Intergovernmental Panel on Climate Change’s Second Assessment Report. (Loreti)

**Response:** The final regulations include global warming potentials from the Intergovernmental Panel on Climate Change’s Third Assessment Report because these were the most recent global warming potentials available when the rule was proposed.

## **7. Allowance Retirements for Voluntary Purchases of Renewable Energy**

**Comment:** There were many comments generally supportive of the decision to retire CO<sub>2</sub> allowances to support voluntary purchases of renewable energy (Northeast CHP Initiative, Constellation. However, almost all of these comments argued that the proposal to cap the number of allowances that can be retired each year is arbitrary and does not fully account for the reductions in global warming pollution provided by voluntary purchases of renewable energy (CLF, Winston Vaughn, MA Sierra Club, Environmental Entrepreneurs, Clean Water Action, Environment Northeast, UCS, Business Council for Sustainable Energy, ICLEI, more than 600 unaffiliated citizens). One commenter also pointed out that the cap could create confusion about whether any particular voluntary purchase of renewable energy can be said to have resulted in emissions reductions (UCS). Others expressed opposition to any retirements that could lead to allowance shortages (Mirant, Dominion, FPL), or claimed that, if retirements are to occur, the cap should be maintained to ensure that retirements do not lead to allowance shortages (MA DPU, FPL). One commenter requested clarification that the intention is to retire up to 200,000 CO<sub>2</sub> allowances *per year* (Environment Northeast).

**Response:** MassDEP acknowledges commenters’ concern about the implications of a constraining cap on the number of CO<sub>2</sub> allowances allocated to the Voluntary Renewable Energy (VRE) Account. While proposed language limiting allowance retirements for voluntary renewable energy purchases to 200,000 allowances each year has been retained in the final regulation, additional language has been added providing for MassDEP to periodically review all

---

<sup>14</sup> Market penetration rate is defined as “a measure of the diffusion of a technology, product, or practice in a defined market, as represented by the percentage of annual sales for a product or practice, or as a percentage of the existing installed stock for a product or category of products, or as the percentage of existing installed stock that utilizes a practice. The Department may determine an appropriate market definition and market penetration metric for a category of technology, product or practice, and may issue guidance specifying the technologies, products or practices that meet a specified market penetration rate,” as defined in 310 CMR 7.70(10)(b).



aspects of these provisions, in consultation with the Division of Energy Resources.

**Comment:** Several commenters suggested that MassDEP retire CO<sub>2</sub> allowances in the VRE Set-aside for renewable energy projects located in any participating state, and not just those states covered by the MA Renewable Portfolio Standard (RPS). (UCS, Constellation)

**Response:** Eligible voluntary purchases of renewable energy are limited to MA RPS-eligible Renewable Energy Credits to ensure that the renewable energy sources satisfy DOER's definition of new renewable energy, and, in the case of biomass, have low emissions. This requires constraining the geographic scope to those states covered by MA's RPS and facilitates administration of this program.

## **8. Economic Impact and Cost Controls**

**Comment:** Several commenters requested that MassDEP include some explicit mechanism to facilitate or mandate withdrawal from the program if it becomes too expensive (FPL, Senator Morrissey and Representative Dempsey, Representative Haddad). Another commenter requested that MassDEP include the authority to waive or suspend compliance obligations for a particular source because of high CO<sub>2</sub> allowance prices or other causes beyond the control of CO<sub>2</sub> budget sources (Northeast GHG Coalition). One commenter argued against the inclusion of such provisions (CLF).

**Response:** Certainty about compliance obligations is a necessary component of the market-based system that will be created by the CO<sub>2</sub> Budget Trading Program. Conversely, uncertainty that would be caused by an opt-out provision would lessen the incentive to plan for future emissions reductions. Furthermore, the regulations include a number of provisions designed to limit price impacts. In addition to the flexibility mechanisms described in the following response, these provisions include an expansion of the use of CO<sub>2</sub> offset allowances in the event that certain price triggers are exceeded. In the event that a stage one trigger price event occurs, CO<sub>2</sub> budget units will be able to expand their use of CO<sub>2</sub> offset allowances from 3.3% of their compliance obligation to 5% of their compliance obligation. If a stage two trigger event occurs, CO<sub>2</sub> budget units will be able to meet 10% of their compliance obligation through CO<sub>2</sub> offset allowances, and MassDEP will award CO<sub>2</sub> offset allowances for the permanent retirement of greenhouse gas allowances or credits that meet specific criteria, even if they are created outside of the United States. These actions should increase the supply of CO<sub>2</sub> allowances available for the CO<sub>2</sub> Budget Trading Program (offset allowances are issued in addition to those allowances allocated to each state), lowering their price, and the cost of compliance. Therefore, MassDEP is finalizing the proposed regulation without any additional components that would allow suspension of, or withdrawal from the program.

**Comment:** Many comments described concerns that the CO<sub>2</sub> Budget Trading Program will lead to higher electricity prices, and that these higher prices will have adverse impacts on low-income consumers and some types of businesses (Paul Reichert, AIM). Some of these comments advocated inclusion of a price cap in the regulation as a guarantee against serious economic effects (Senator Menard, MA Food Association, Retailers Association of MA, Boston Real Estate Board, Senator Keenan). One commenter predicted, "in any event RGGI program impacts

in regional electricity price formation will be overwhelmed by the changes in underlying fuel prices” (MA DPU).

**Response:** While CO<sub>2</sub> allowance costs will exert some direct upward pressure on electricity prices, any price impacts are expected to be minor. The Regional Greenhouse Gas Initiative (RGGI) planning process employed sophisticated economic models to characterize potential economic impacts on the electricity sector and the broader economy. The resulting data was discussed extensively by stakeholders, academics, and regulators. After careful consideration of these analyses, MassDEP has concluded that the CO<sub>2</sub> Budget Trading Program is unlikely to have substantial impacts on electricity prices. The proposed regulations also include a number of provisions designed to limit price impacts. These provisions include three-year compliance periods that mitigate impacts of year-to-year variation in weather and economic activity, and offset provisions that allow for limited compliance through off-sector reductions. In the event that prices exceed specified triggers, compliance periods will be expanded to four years and the expanded use of offsets will be allowed as described above.

**Comment:** Several commenters expressed concern that the MA CO<sub>2</sub> Budget Trading Program could adversely affect the reliability of the electrical grid and drive MA toward increased reliance on natural gas for electricity generation (James Smith, Senator Morrissey and Representative Dempsey, AIM). One commenter stated, “We do not expect that RGGI will jeopardize reliability in the New England region” (MA DPU).

**Response:** MassDEP, through its participation in the Regional Greenhouse Gas Initiative’s planning process, has considered likely effects of the CO<sub>2</sub> Budget Trading Program on the region’s electricity grid and concluded that significant negative impacts on reliability and fuel diversity are unlikely. The grid is designed to be resilient against sudden and unpredictable challenges such as the shutdown of a large nuclear power plant or sustained extreme temperatures. The MA CO<sub>2</sub> Budget Trading Program, by contrast, will impose relatively minor and predictable requirements that can be anticipated and prepared for prior to the commencement of, and during, multi-year compliance periods.

## **9. Imports and Leakage**

**Comment:** A number of comments referred to the potential for leakage, in which increased electricity costs in participating states lead to increased emissions outside of participating states. Two mechanisms by which increased prices for electricity generated in participating states could cause leakage were described: Higher-emitting generators that are not required to purchase and retire allowances could increase production of electricity for export to participating states, and higher-emitting factories located outside of the United States could increase production of manufactured goods to replace goods not produced in MA factories that close because of high electricity prices (Salem Harbor Alliance for Reliable Energy, Representative Keenan, MA Sierra Club, MA Food Association, Retailers Association of MA, Boston Real Estate Board, FirstLight, Representative Keenan, Senator Morrissey and Representative Dempsey, Senator Menard, Dominion, James Smith, AIM, UCS).

**Response:** MassDEP acknowledges that there is likely to be some amount of leakage as a result of the CO<sub>2</sub> Budget Trading Program. However, MassDEP has concluded that the threat of

leakage is not sufficient to delay implementation of this program. In reaching this conclusion, MassDEP considered studies undertaken during the Regional Greenhouse Gas Initiative's planning process that used energy systems and economic models to characterize shifts in the location of electricity production and likely effects on economic sectors such as manufacturing. It is important to note that policy measures to reduce demand for electricity, such as those being considered by the Commonwealth and other participating states (e.g., expanding energy efficiency programs), would moderate the impetus for leakage. MassDEP will participate in regional efforts to monitor changes in electricity generation and consumption in MA, the region, and beyond as the CO<sub>2</sub> Budget Trading Program is implemented; and will continue to work with the other participating states in their ongoing evaluation of policy options that can be implemented to reduce leakage.

## **10. Coordination with other State and Federal Programs**

**Comment:** Commenters urged MassDEP to promulgate regulations as similar to the RGGI Model Rule as possible and consistent with the RGGI Memorandum of Understanding (MOU) (CLF, Mirant).

**Response:** MassDEP has concluded that it is in the best interests of the Commonwealth to participate in the CO<sub>2</sub> Budget Trading Program. Therefore, where appropriate, MassDEP has promulgated regulations that are similar to the RGGI Model Rule and consistent with the RGGI MOU. MassDEP notes, however, that there are many provisions of the RGGI Model Rule that provide flexibility to the states to adopt their own regulatory approaches.

**Comment:** Several commenters suggested that MassDEP include a provision requiring the adoption of consistent programs in several other states before the provisions of the MA CO<sub>2</sub> Budget Trading Program take effect (Dominion, Northeast GHG Coalition, NRG). One commenter cautioned against the inclusion of such language (CLF).

**Response:** MassDEP is committed to implementing the MA CO<sub>2</sub> Budget Trading Program on schedule, and regulating CO<sub>2</sub> emissions from CO<sub>2</sub> budget sources beginning January 1, 2009. MassDEP expects most of the RGGI MOU signatory states to have rules in place to implement a program similar to the MA CO<sub>2</sub> Budget Trading Program by the January 1, 2009 start date. However, 310 CMR 7.70 is a MA program that does not require the participation of other states and MassDEP plans to move forward with its own program even if other RGGI MOU signatories do not have rules in place by January 1, 2009.

**Comment:** One commenter asked: "It is not yet clear from those who created this process, how RGGI will interact with our own state legislature and our own state regulations. Will we as a sovereign state be giving up our authority to legislate?" (Representative Keenan)

**Response:** No, 310 CMR 7.70 is a MA program that does not require the participation of other states. MA is not ceding any authority to legislate or regulate.

**Comment:** Several commenters requested that MassDEP not implement the MA CO<sub>2</sub> Budget Trading Program because national legislation will soon render the program unnecessary (James Smith, Salem Harbor Alliance for Reliable Energy, Representative Keenan), while another recommended that the regulations contain a provision to provide for automatic withdrawal when

a federal program is in place (Mirant, Representative Haddad).

**Response:** MassDEP is proceeding with its plans to implement the MA CO<sub>2</sub> Budget Trading Program without a sunset provision. If a federal program is implemented, MassDEP will evaluate the federal requirements and, if appropriate, will propose amendments to the MA program.

## **11. Allowance Tracking Accounts**

**Comment:** One commenter expressed support for proposed provisions that allow any person to open and use an account to hold or transfer CO<sub>2</sub> allowances. (Entergy)

**Response:** Provisions that allow any person to open and use a general account to hold or transfer CO<sub>2</sub> allowances are retained in the final regulation.

## **12. Monitoring**

**Comment:** Regulations must ensure that public and quasi-public authorities and agencies of the Commonwealth are provided with sufficient time to comply with the monitoring and reporting requirements. (MBTA)

**Response:** The quasi-public authorities subject to 310 CMR 7.70 are small and could generate Electronic Data Reports (EDRs) using EPA Monitoring Data Checking (MDC) software without installing additional monitoring systems. MassDEP has concluded that the promulgation schedule for 310 CMR 7.70 will provide facilities sufficient time to comply with the monitoring and reporting requirements contained therein.

**Comment:** One commenter requested that the draft regulations be revised to “allow sources to use Equation G1 in 40 CFR Part 75 for determining CO<sub>2</sub> emissions provided the flow and composition measurements meet established quality criteria.” The commenter asserted that equation G1 may represent the most accurate method in some cases. (Loreti)

**Response:** MassDEP has decided not to allow the use of Equation G1 in 40 CFR Part 75 at this time. While G1 is capable of providing accurate CO<sub>2</sub> emissions data, MassDEP has not yet found a way to overcome its limitations with respect to QA/QC protocols. In the event that MassDEP finds a way to overcome these hurdles, it will reevaluate this decision, and notify sources as appropriate.

**Comment:** One commenter suggested that “the equations for calculating CO<sub>2</sub> emissions from biomass should be revised to eliminate the heating value term.” (Loreti)

**Response:** MassDEP agrees that the heating value terms are unnecessary for gaseous biomass, and has simplified the equations in 310 CMR 7.70(10)(g)2.c. accordingly.

**Comment:** Non-Acid Rain CO<sub>2</sub> Budget units should be able to provide CO<sub>2</sub> emissions data under the Massachusetts CO<sub>2</sub> Budget Program by reporting CO<sub>2</sub> emissions in the same EDRs used to report quarterly NO<sub>x</sub> emissions. RGGI states should request, or pay, Environmental Protection Agency (EPA) Clean Air Markets Division (CAMD) to revise their EDR Checking

software so that the EPA software can properly recognize and evaluate such CO<sub>2</sub> EDR data for non-Acid Rain CO<sub>2</sub> Budget sources, perhaps by adding a new Code in the Program Field of RT 505. (Bob Machaver).

**Response:** MassDEP welcomes technical support from federal agencies, and will continue to explore options for utilizing existing reporting infrastructure.

**Comment:** In 310 CMR 7.70(8)(g)2.b., I believe the formula used to calculate B<sub>EF</sub> for solid biomass fuels should be revised so that “HHV” (higher heating value) is reported in units of “MMBtu/lb” not “Btu/lb” in order for the calculated “HI” (heat input) to be determined in units of MMBtu. The formula used to calculate B<sub>EF</sub> for gaseous biomass fuels should be revised so that the “HHV” of the gas is reported in units of “MMBtu/scf” not “Btu/scf” in order for the calculated “HI” to be determined in units of MMBtu (Bob Machaver).

**Response:** MassDEP agrees, and has amended 310 CMR 7.70(8)(g)2.b. appropriately.

**Comment:** In 310 CMR 7.70(8)(g)2c, I believe the formula used to calculate B<sub>EF</sub> for gaseous biomass fuels should be revised so that “C” (carbon content in percent) is divided by 100 to make it a fractional value (Bob Machaver).

**Response:** MassDEP has revised units for carbon content to fraction by weight.

**Comment:** The requirements of 310 CMR 7.70(8)(b)4.b.ii. and iii. should only apply to Continuous Emissions Monitoring Systems (CEMSs), not Appendix D monitoring systems. Appendix D monitoring systems determine CO<sub>2</sub> emissions and heat input from fuel flow and fuel sampling, and therefore changes to the “flue gas handling system”, “replacement of analyzers”, “change in probe location” and “changes in the flow monitor polynomial” will not affect CO<sub>2</sub> monitoring by these Appendix D systems under 310 CMR 7.70 (Bob Machaver).

**Response:** MassDEP agrees with the commenter, and has revised 310 CMR 7.70(8)(b)4.b. accordingly.

**Comment:** In practice, MassDEP should ensure that for new CO<sub>2</sub> Budget Units, all of which will all also be subject to the Mass Clean Air Interstate Rule (CAIR) and Acid Rain Programs, the source will only be required to submit a single Certification Application, as the same monitoring system will be used for all three programs. To the extent feasible, MassDEP should consolidate the Certification and Certification Application submittal process for these programs (Bob Machaver).

**Response:** MassDEP will consolidate the Certification and Certification Application submittal process for these programs to the extent feasible, and will not require certification information to be submitted three separate times for Mass CAIR, the Acid Rain Program, and the MA CO<sub>2</sub> Budget Trading Program.

**Comment:** The 310 CMR 7.70(3)(c)5. provisions require that non-Acid Rain units (i.e. units not subject to 40 CFR 72) submit a detailed Monitoring Plan. It is suggested that any detailed Monitoring Plan previously submitted and accepted under 40 CFR 75 for Mass CAIR /NO<sub>x</sub>

Budget<sup>15</sup> only sources, will also be acceptable under 310 CMR 7.70, so long as the Monitoring Plan has been modified/elaborated to describe any additional Data Acquisition and Handling Software (DAHS) calculations [or hardware, if applicable] incorporated into the CEMS to determine CO<sub>2</sub> emissions.

The 310 CMR 7.70(3)(c)4. provisions indicate that any modification to the monitoring methodology approved for Acid Rain units under 40 CFR 72-75 are automatically approved and incorporated into the MA CO<sub>2</sub> Budget Program Emissions Control Plan (ECP). This provision should be extended to NO<sub>x</sub> Budget/Mass CAIR only sources. More specifically, this provision should indicate that any modification to the monitoring methodology used by a CO<sub>2</sub> budget unit that conforms with 40 CFR 75 methods and procedures will be allowed (i.e. approved by MassDEP and incorporated into the MA CO<sub>2</sub> Budget Program ECP) (Bob Machaver).

**Response:** MassDEP does not believe that it would be appropriate to modify 310 CMR 7.70(3)(c)4. as requested. NO<sub>x</sub> Budget and Mass CAIR monitoring plans address NO<sub>x</sub>, not CO<sub>2</sub>; therefore, no non-Acid Rain unit has an approved CO<sub>2</sub> monitoring plan. EPA oversees Acid Rain units' monitoring methods for CO<sub>2</sub>; however, 40 CFR Part 75 does not require EPA review and approval of CO<sub>2</sub> monitoring methods for NO<sub>x</sub> Budget or Mass CAIR sources. Therefore, MassDEP review of CO<sub>2</sub> monitoring methods is necessary for all units that are not Acid Rain units.

**Comment:** This CO<sub>2</sub> rule should explicitly indicate that any method allowed under 40 CFR 75 for the monitoring of CO<sub>2</sub> emissions would automatically be allowed under 310 CMR 7.70 for use by non-Acid Rain sources (Bob Machaver).

**Response:** Non-Acid Rain sources can use all of the CO<sub>2</sub> monitoring methods allowed for Acid Rain sources under 310 CMR 7.70(8), which are all the methods allowed under 40 CFR 75 except equation G1.

**Comment:** The Reporting deadlines discussed in 310 CMR 7.70(8)(a)2 and 3. do not appear to fully specify the initial emission reporting date for new CO<sub>2</sub> budget units. The 310 CMR 7.70(8)(a)(3) provisions indicate how emission data is to be reported if a CEMS has not completed certification testing within the timelines specified in 310 CMR 7.70(8)(a)2. However, for a new Unit that completes CEMS Certification before expiration of these timelines, it is unclear: (a) if reporting begins the hour immediately following the end of the applicable CEMS Certification deadline date (i.e. the earlier of 90 operating days or 180 calendar days after commencement of commercial operation); or (b) if reporting begins at the hour following completion of Certification testing (which would normally pre-date the CEMS Certification deadlines). Under 40 CFR 75, EDR reporting is initiated at the date of initial provisional CEMS Certification if it precedes the certification deadline date (see 40 CFR 75.64); however 310 CMR 7.70 appears to be silent on this issue (Bob Machaver).

**Response:** 310 CMR 7.70(8)(a)1.b. and (e)4.b. require units to follow all requirements of 40 CFR Part 75, including reporting as detailed in 40 CFR 75.64, i.e., reporting should begin with provisional certification if prior to the deadline.

---

<sup>15</sup> NO<sub>x</sub> Budget and Mass CAIR are cap-and-trade programs for ozone season emissions of NO<sub>x</sub> which end in 2008 and begin in 2009, respectively.

**Comment:** Non-Acid Rain NO<sub>x</sub> Budget units should qualify for the initial certification exemption under 310 CMR 7.70(8)(b)1, except for perhaps requiring a DAHS verification. It is requested that the language of this provision be revised to explicitly indicate that this “Initial Certification” exemption extends to any unit: (a) that has been certified under 40 CFR 75; and (b) does not require hardware modifications to upgrade the system to perform CO<sub>2</sub> monitoring and reporting (Bob Machaver).

**Response:** Non-Acid Rain CO<sub>2</sub> Budget units are unlikely to have initially conducted the necessary CO<sub>2</sub> monitoring system certification tests and maintained such certification through ongoing testing, largely because under the NO<sub>x</sub> Budget Program, units typically conduct one required test (the Relative Accuracy Test Audit, or RATA) on the NO<sub>x</sub> monitoring system as a whole and not on any CO<sub>2</sub> or O<sub>2</sub> monitor that is part of the system and that would be used for CO<sub>2</sub> emissions reporting under 310 CMR 7.70. If there are non-Acid Rain CO<sub>2</sub> Budget units that believe they have the data available which would qualify them as having previously certified a CO<sub>2</sub> monitoring system under 40 CFR 75, MassDEP will review such data. As a practical matter, as all non-Acid Rain CO<sub>2</sub> Budget units with CEMS will be conducting daily calibration error, quarterly linearity, and annual or semi-annual RATA tests in the next year, the only test that would not otherwise be performed is the cycle time test.

**Comment:** In the definition of a Continuous Emissions Monitoring System (CEMS) (page 11), there is a requirement to “sample, analyze, measure, and provide ... readings recorded at least once every 15 minutes...” Will the Part 75 requirements under § 75.10(d) be allowed (provision for reduced number of data points if in calibration or maintenance; handling of partial operating hours)? (Environmental Systems Corporation)

**Response:** Yes, provisions of 40 CFR 75.10(d) are allowed. No amendments are required to accomplish this.

**Comment:** The definition of a Continuous Emissions Monitoring System (CEMS) (pages 11 and 12) include:

“A nitrogen oxides emissions rate (or NO<sub>x</sub>-diluent) monitoring system, consisting of a NO<sub>x</sub> pollutant concentration monitor, a diluent gas (CO<sub>2</sub> or O<sub>2</sub>) monitor, and an automated data acquisition and handling system and providing a permanent, continuous record of NO<sub>x</sub> concentration, in parts per million (ppm), diluent gas concentration, in percent CO<sub>2</sub> or O<sub>2</sub>; and NO<sub>x</sub> emissions rate, in pounds per million British thermal units (lb/MMBtu);”

Why are a NO<sub>x</sub> rate system and an O<sub>2</sub> system required for this CO<sub>2</sub> trading program? (Environmental Systems Corporation)

**Response:** The types of monitors listed are examples of the types of systems that may be used to comply with 310 CMR 7.70(8). Therefore, facilities are not required to install a NO<sub>x</sub> rate system and an O<sub>2</sub> system to comply with 310 CMR 7.70(8). To improve clarity, MassDEP has deleted examples of CEMS from the definition of CEMS.

**Comment:** 310 CMR 7.70(1)(e)5.a.ii. (page 18) requires that “All emissions monitoring information” be kept for a period of 10 years. Which data must be kept? Specifically, we are

concerned about the data storage impact of retaining all minute data collected by every monitoring system. (Environmental Systems Corporation)

**Response:** CO<sub>2</sub> budget units are not required to retain sub-hourly data points. To improve clarity, MassDEP has added a reference to 40 CFR 75.57.

**Comment:** The inclusion of appendix E throughout 310 CMR 7.70(8) seems incorrect, since that methodology estimates NO<sub>x</sub> rate emissions. (Environmental Systems Corporation)

**Response:** MassDEP agrees with the commenter and has deleted all references to Appendix E.

**Comment:** 310 CMR 7.70(8)(b)4.c. provides an instruction for the recertification process that directs the user to “follow the procedures in 40 CFR 75.20(b)(5),” however, that section discusses actions subsequent to an action of disapproval by the Administrator. (Environmental Systems Corporation)

**Response:** 310 CMR 7.70 is a state-run program, therefore MassDEP intends to issue disapprovals pursuant to 310 CMR 7.70(8)(b)4.c.v., if necessary. Recertifications shall proceed in the manner prescribed in 40 CFR 75.20(b)(5) and (g)(7), and therefore, recertification will go through MassDEP or its agent. The regulations have been amended to improve clarity on this point.

**Comment:** 310 CMR 7.70(8)(e)2. requires the submittal of a certification application for each monitoring system. If a source were also subject to other programs using Part 75 reporting (Acid Rain Program, NO<sub>x</sub> Budget Trading Program, or the CAIR), would it be permissible to include non-RGGI information in this submittal, e.g., SO<sub>2</sub> system certification testing? (Environmental Systems Corporation)

**Response:** Although the section the commenter cites is not related to certification applications, MassDEP will consolidate the Certification Application submittal process for units newly subject to Mass CAIR, the Acid Rain Program and the MA CO<sub>2</sub> Budget Trading Program to the extent feasible. MassDEP will accept submittals of certification results for SO<sub>2</sub>, NO<sub>x</sub> and CO<sub>2</sub> in a single test report. If data systems allow, MassDEP will accept submittals of certification results for SO<sub>2</sub>, NO<sub>x</sub> and CO<sub>2</sub> in a single Electronic Data Report (EDR).

**Comment:** 310 CMR 7.70(8)(e)1. provides a general discussion of recordkeeping and reporting requirements (page 44). The inclusion of Subpart H in this paragraph (40 CFR 75.73) seems incorrect, since that pertains to NO<sub>x</sub> mass emissions. (Environmental Systems Corporation)

**Response:** Facilities are not required to submit NO<sub>x</sub> mass emissions under 310 CMR 7.70(8). Facilities should interpret the record keeping and reporting requirements of 40 CFR 75.73 as guidance, and should apply them as appropriate for reporting CO<sub>2</sub> mass emissions.

**Comment:** 310 CMR 7.70(8)(e)2. says that monitoring plans must “comply with requirements of 40 CFR 75.62,” however, this section necessarily includes non-CO<sub>2</sub> systems; perhaps a statement of applicability should be appended. (Environmental Systems Corporation)



**Response:** MassDEP did not intend to require facilities to comply with 40 CFR 75.62, but instead intended for owners or operators of a CO<sub>2</sub> budget unit to submit a monitoring plan in the manner prescribed in 40 CFR 75.62. 310 CMR 7.70(8)(e)2. has been amended accordingly. The following clarifying language has also been added to the 310 CMR 7.70(8)(a):

“Where referenced in 310 CMR 7.70(8), the monitoring requirements of 40 CFR Part 75 shall be adhered to in a manner consistent with the purpose of monitoring and reporting CO<sub>2</sub> mass emissions pursuant to 310 CMR 7.70.”

**Comment:** 310 CMR 7.70(8)(e)3. says that a certification application should include the information required under 40 CFR 75.63 and 40 CFR 75.73 (c) and (e). The inclusion of Subpart H in this paragraph (40 CFR 75.73) seems incorrect, since that pertains to NO<sub>x</sub> mass emissions. (Environmental Systems Corporation)

**Response:** The reference to 40 CFR 75.73 (c) and (e) is incorrect, as sources should submit the information required under 40 CFR 75.53(e) and (f). 310 CMR 7.70(8)(e)3. has been amended accordingly.

**Comment:** 310 CMR 7.70(8)(e)4.a. requires quarterly reports that include CO<sub>2</sub> mass emissions and heat input data to be submitted “in an electronic format prescribed by the Administrator unless otherwise proscribed by the Department” (page 44). In section (b), the report is to “be submitted in the manner specified in Subpart H of 40 CFR Part 75 and 40 CFR 75.64.” Is there an electronic format that is proscribed by the Department? (Environmental Systems Corporation)

**Response:** MassDEP has amended 310 CMR 7.70(8)(e)4.a. to read “prescribed,” not “proscribed.” Yes, there is a manner prescribed by MassDEP – it is Subpart H of 40 CFR Part 75.

**Comment:** Will the RGGI program be ready to accept Electronic Data Reports (EDRs) in XML format, if the Clean Air Markets Division (CAMD) EDRs are used for compliance? Will the RGGI program accept the files with “extraneous data” (e.g., SO<sub>2</sub> mass, QA tests unrelated to the RGGI-required instruments)? (Environmental Systems Corporation)

**Response:** MassDEP is still reviewing data reporting procedures, and will notify sources as soon as they are finalized.

**Comment:** The inclusion of Subpart H (§ 75.64) in 310 CMR 7.70(8)(e)4.a. seems incorrect, since that pertains to NO<sub>x</sub> mass emissions. The last sentence of 310 CMR 7.70(8)(e)4.b. specifically excludes opacity and SO<sub>2</sub>; does this mean that NO<sub>x</sub> emissions are required to be reported? (Environmental Systems Corporation)

**Response:** Please note that 40 CFR 75.64 is in 40 CFR Part 75 Subpart G, and contains general emissions reporting requirements (quarterly reports). Sources should submit emissions reports “in the manner specified in Subpart H.” This means that sources should use Subpart H as general reporting guidelines; sources are not required to report NO<sub>x</sub> to comply with 310 CMR 7.70. MassDEP has amended 310 CMR 7.70(8)(a) and (e)4.b. to further clarify the regulation.

**Comment:** 310 CMR 7.70(8)(h) describes an “output monitoring plan” as well as the “net electrical output.” Will these be formatted reports similar to an EDR, will the requirements be satisfied via data that’s added to the EDR, or will the reports be word documents/ spreadsheets, etc.? (Environmental Systems Corporation)

**Response:** Facilities shall satisfy the requirements of 310 CMR 7.70(8)(h) by submitting annual total MWh electric output and MMBtu useful steam output at the unit level, in spreadsheet form both electronically and in hard copy. This net output data should not be submitted in an EDR.

**Comment:** 310 CMR 7.70(8)(h)1. requests reporting of “net electrical output” (page 47); should this term be defined in 310 CMR 7.70(1)(b)? (Environmental Systems Corporation)

**Response:** MassDEP believes that the term is clear, and does not require a definition. RGGI facilities, who are also regulated facilities under the NO<sub>x</sub> Budget Program and Mass CAIR, have methodologies for determining net electrical output. These were established on a case-by-case basis and take into account the operational details for each facility. New RGGI units would go through a similar process.

**Comment:** 310 CMR 7.70(8)(h)5.b. discusses the QA/QC activities required for “other types” of nonbilling meter equipment. Will these QA activities be reported in the EDR? To do that, they would need to appear as components in the monitoring plan, which could be problematic, as they may not be defined component types in the EPA programs, or could represent metering systems that are not used in the EPA programs. (Environmental Systems Corporation)

**Response:** QA/QC activities related to output should not be reported in the EDR.

**Comment:** 310 CMR 7.70(8)(h)5.c. discusses the missing data substitution requirements for missing output readings. Must this substitution be performed by the DAHS (Data Acquisition Handling Software), or would sources perform this manually? If the parameter is not reported (e.g., a temperature reading in a gas fuel flowmeter system), how will the Department know that it’s been substituted? Will codes need to be appended to this data to show its origin? (Environmental Systems Corporation)

**Response:** Sources may track their output data however they choose. However, sources should retain records indicating how missing data was addressed, but this does not have to be done in the DAHS. These reports are subject to audit by MassDEP.

**Comment:** 310 CMR 7.70(8)(h)6.c. requires electronic reporting of the annual net output (page 49). What are the specifications for this electronic report? Does it include hourly values? (Environmental Systems Corporation)

**Response:** Sources are not required to report hourly values, but instead should only submit annual total MWh electric output and MMBtu useful steam output at the unit level. MassDEP has amended 310 CMR 7.70(8)(h)6.c. to require data to be submitted in spreadsheet form.

**Comment:** 310 CMR 7.70(8)(a)1.a. stipulates the “requirements for installation, certification, and data accounting” (page 38): “Install all monitoring systems required ... for monitoring CO<sub>2</sub>

mass emissions.” Should heat input be included in this sentence? (Environmental Systems Corporation)

**Response:** No, because not all CO<sub>2</sub> mass reporting approaches require determination of heat input.

**Comment:** 310 CMR 7.70(8)(a)1. lists the monitoring requirements:

“(a) Install all monitoring systems required under 310 CMR 7.70(8) for monitoring CO<sub>2</sub> mass emissions. This includes all systems required to monitor CO<sub>2</sub> concentration, stack gas flow rate, O<sub>2</sub> concentration, heat input, and fuel flow rate, as applicable, in accordance with 40 CFR 75.13, 75.71 and 75.72 and all portions of appendix G of 40 CFR part 75, except for equation G-1 in 40 CFR Part 75. Equation G-1 in Appendix G shall not be used to determine CO<sub>2</sub> emissions under this Part.”

Which parameters are required to be monitored? Only CO<sub>2</sub> mass and heat input are required to be reported under Section 7.70(8)(e). Therefore, O<sub>2</sub> and moisture are not required parameters, unless needed to compute CO<sub>2</sub> mass, correct?

Which methodologies from Part 75 are allowed? This paragraph cites:

- § 75.13 (CO<sub>2</sub> mass emissions)
- § 75.71 (NO<sub>x</sub> rate under Subpart H) – what has this to do with CO<sub>2</sub> mass?
- § 75.72 (NO<sub>x</sub> mass under Subpart H) – why?
- Can an O<sub>2</sub> monitoring system be used to calculate CO<sub>2</sub> emissions?
- Appendix G except for G-1. Does this mean that equation G-4 (the most commonly CO<sub>2</sub> exception method used in the Acid Rain Program) is allowed? And can sources subtract out CO<sub>2</sub> retained in ash and sorbent using equations G-2, G-3, G-5, G-6, and G-7?

Is the Appendix D fuel flow methodology for heat input allowed? Should these be included in this requirements section? The way this paragraph currently reads, no estimation methodologies would be allowed. (Environmental Systems Corporation)

**Response:** Sources are required to install all monitoring systems that are necessary to monitor CO<sub>2</sub> mass emissions in accordance with 40 CFR Part 75. Sources may monitor CO<sub>2</sub> mass emissions using any methodology except for equation G-1. Thus sources can subtract out CO<sub>2</sub> retained in ash and sorbent by using equations G-2, G-3, G-5, G-6, and G-7. The Appendix D fuel flow methodology for heat input may be used. Monitoring pursuant to 310 CMR 7.70(8) may require systems to monitor CO<sub>2</sub> concentration, stack gas flow rate, O<sub>2</sub> concentration, heat input, and fuel flow rate. 310 CMR 7.70(8)(a)1.a. has been amended to add clarity.

**Comment:** 310 CMR 7.70(8)(b)3. requires resubmittals of petitions for an alternative requirement. However, the section cited (§ 75.17(a)) provides for petitions for NO<sub>x</sub> apportioning at a common stack, bypass stack, or multiple stack, not for CO<sub>2</sub> apportionment. Section 75.13, which describes the CO<sub>2</sub> monitoring provisions, allows apportionment petitions under § 75.16, which is the SO<sub>2</sub> monitoring provisions section; should that be used instead? 310 CMR 7.70(8)(b)3. describes avenues for relief from § 75.12, 75.17, and Subpart H, all of which are

NO<sub>x</sub> emissions monitoring requirements. How does this apply to RGGI sources?  
(Environmental Systems Corporation)

**Response:** Submittal of previous petitions and approvals is required by 310 CMR 7.70(8)(b)3. so that MassDEP can determine whether the approval applies under this program, since approved petitions for other pollutants could impact determination of CO<sub>2</sub> emissions. MassDEP has amended 310 CMR 7.70(8)(b)3. to clarify the requirement.

**Comment:** 310 CMR 7.70(8)(b)5. details the certification requirements for low mass emission units (page 43), and notes that a unit must qualify to use the Low Mass Emissions (LME) methodology. The Part 75 qualification consists of three parts: 1) that the unit is oil and/or gas-fired only; 2) that the unit's SO<sub>2</sub> emissions do not meet the ceiling limit; and 3) that the unit's NO<sub>x</sub> emissions do not meet the ceiling limit. Will all three of these qualification points be required to be met to qualify to use the LME methodology for RGGI? (Environmental Systems Corporation)

**Response:** Low Mass Emissions Methodologies (from 40 CFR 75.19) are allowed under 310 CMR 7.70(8). However, because EPA does not have a CO<sub>2</sub> annual tonnage threshold for using the LME methodology, MassDEP will employ NO<sub>x</sub> and SO<sub>2</sub> thresholds, where available. In cases where a unit is not subject to an acid rain emissions limitation or 310 CMR 7.32, MassDEP will employ the annual emissions thresholds for NO<sub>x</sub> and SO<sub>2</sub>. This new language can be found at 310 CMR 7.70(8)(a)3.c. (see below).

- i. CO<sub>2</sub> budget units subject to an acid rain emissions limitation or 310 CMR 7.32 that qualify for the optional SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub> (for acid rain) or NO<sub>x</sub> (for 310 CMR 7.32) emissions calculations for Low Mass Emissions (LME) units under 40 CFR 75.19 and report emissions for such programs using the calculations under 40 CFR 75.19, shall also use the CO<sub>2</sub> emissions calculations for LME units under 40 CFR 75.19 for purposes of compliance with 310 CMR 7.70.
- ii. CO<sub>2</sub> budget units subject to an acid rain emissions limitation or 310 CMR 7.32 that do not qualify for the optional SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub> (for acid rain) or NO<sub>x</sub> (for 310 CMR 7.32) emissions calculations for LME units under 40 CFR 75.19, shall not use the CO<sub>2</sub> emissions calculations for LME units under 40 CFR 75.19 for purposes of compliance with 310 CMR 7.70.
- iii. CO<sub>2</sub> budget units not subject to an acid rain emissions limitation or 310 CMR 7.32 shall qualify for the optional CO<sub>2</sub> emissions calculation for LME units under 40 CFR 75.19, provided that they emit less than 100 tons of NO<sub>x</sub> annually and no more than 25 tons of SO<sub>2</sub> annually.

**Comment:** Will sources that fire eligible biomass report using the EPA Clean Air Markets Division (CAMD) Electronic Data Report (EDR) structure (page 45)? How will the additional items they are required to report be handled:

- Chemical analysis of the fuel, including carbon content
- Moisture content of the fuel
- Total input, in tons, combusted

- Total input, in heat input, combusted, both as-fired and potential
- Fuel feed rate, in tons/hour
- Total operating hours for which the biomass was co-fired
- CO<sub>2</sub> tons emitted due to firing the biomass

(Environmental Systems Corporation)

**Response:** MassDEP is still reviewing data reporting procedures for eligible biomass, and will notify CO<sub>2</sub> budget sources as soon as it has finalized those procedures.

**Comment:** Will all aspects of Part 75 quality assurance be allowed? Such provisions include:

- Use of grace periods for linearity and RATA tests
- Use of the QA-operating quarter concept for determining test due dates
- Provision for using like-kind replacement analyzers
- Use of conditional data validation following an analyzer repair or replacement
- Allowance for startup grace period for calibration checks
- Use of flow-to-load testing during non-RATA quarters to ensure accuracy of stack flow monitoring systems
- Use of fuel flow-to-load testing to extend field test deadlines
- Allowance for off-line calibration checks after successful demonstration is made

(Environmental Systems Corporation)

**Response:** Yes, the above aspects for 40 CFR Part 75 will be allowed for purposes of complying with 310 CMR 7.70(8).

**Comment:** How will MassDEP address bias adjustment factors for CO<sub>2</sub> systems as Part 75 currently has no rule for determining these for CO<sub>2</sub> systems? (Environmental Systems Corporation)

**Response:** Bias adjustment procedures beyond those required for 40 CFR Part 75 are not required.

**Comment:** How will MassDEP account for CO<sub>2</sub> emissions on unmonitored bypass stacks? (Environmental Systems Corporation)

**Response:** MassDEP will account for CO<sub>2</sub> emissions on unmonitored bypass stacks according to Part 75. Therefore, CO<sub>2</sub> budget units should follow Part 75 unless directed otherwise by 310 CMR 7.70(8).

**Comment:** Will MassDEP allow the use of diluent capping for CO<sub>2</sub>? Part 75 currently allows the use of diluent capping for CO<sub>2</sub>, but a soon-to-be released rulemaking will discontinue its use. (Environmental Systems Corporation)

**Response:** CO<sub>2</sub> budget units should follow Part 75 unless directed otherwise by 310 CMR 7.70(8).

**Comment:** Will the Part 75 procedures for setting maximum potential CO<sub>2</sub> and span and range for CO<sub>2</sub> monitors be mandated? This may not be flexible enough for some sources, now that

CO<sub>2</sub> emissions will have a dollar value associated with them. If the Part 75 procedures are not followed, how will a source comply with both? (Environmental Systems Corporation)

**Response:** In the event that these procedures are not flexible enough for a CO<sub>2</sub> budget unit, that unit should file a petition under 310 CMR 7.70(8)(f).

## **IV. List of Commenters**

### **A. Organizations**

Associated Industries of Massachusetts (AIM)	ISO New England
Business Council for Sustainable Energy	The Loreti Group
Ceres	Massachusetts Bay Transportation Authority
Community Energy	Massachusetts Department of Public Utilities
Conservation Law Foundation (CLF)	Massachusetts Food Association
Constellation Energy Group, Inc.	Massachusetts Sierra Club
Covanta Energy Corporation	Millennium Power Partners, L.P.
Dominion Energy New England, Inc.	Mirant Canal, LLC
Environmental Systems Corporation	Mirant Kendall, LLC
Entergy Corporation	National Grid
Environment Massachusetts	Northeast Biofuels Collaborative
Environment Northeast	Northeast Combined Heat and Power Initiative
Environmental Entrepreneurs (E2) New England	Northeast Regional Greenhouse Gas Coalition
FPL Energy	NRG Energy, Inc.
FirstLight Power Resources, Inc.	Retailers Association of Massachusetts
Greater Boston Real Estate Board	Union of Concerned Scientists (UCS)
H2 Diesel Holdings, Inc.	Urban Ecology Institute
ICLEI-Local Governments for Sustainability	
International Paper Products Corporation	

### **B. Massachusetts State Legislators**

Brian S. Dempsey (House Chair, Committee on Telecommunications, Utilities and Energy)  
John D. Keenan (Massachusetts State Representative)  
Patricia A. Haddad (Massachusetts State Representative)  
Joan Menard (Massachusetts Senate Majority Whip)  
Michael W. Morrissey (Senate Chair, Committee on Telecommunications, Utilities and Energy)

### **C. Unaffiliated Citizens**

Deborah Abeles	Naomi Aluf	Kathleen Atkins
William Abend	Susan Anderson	Jude Ayer
Marthajoy Aft	Fred Andresen	Margaret Bachelder
Jah-ahbu Allah-Mann	Virginia Ansbergs	Mary Bain
Gary Allard	Mary Arpin	Stanley Baker
Steven Allen	Peter Arsenault	Tom Baker
S.O. Allen	Nicole Ashmankas	Miriam Baker
Allen Altman	Ann Asnes	Adam Banville

Mathew Barbosa  
William Barclay  
Ellen Bard  
Cynthia Barrett  
Jacob Barth  
Carolyn C. Barthel  
Richard Bartlett  
Henry Bartlett  
Patti Batchelder  
McKenzie Blair Batson  
Martin Bauman  
Marilyn Beal  
Nicole Bechard  
Ellen Becker  
Eric Becker  
Joel Bein  
Sarah Beladi  
Joseph Belisle  
Julia Bellefontaine  
David Belsley  
Leslie Bemis  
Shari Bence  
Lynn Bengston  
Scott Benoit  
Lucy Benson  
Eleanor Beram  
Kimberly Berry  
Bob Berry  
Lisa Bertola  
Linda Bessom  
Robin Biscaia  
George Bissell  
Marcie Black  
Susan Blain  
Ian Boardman  
Enid Boasberg  
Hurley Bogardus  
Sandra Bolton  
Bob Bousquet  
Donald Bowen  
Edward Brainard  
Laurie Brandt  
Aviva Brecher  
Irene Brennan  
Roslyn Broch  
Sally Brotman

Steve Brown  
Philip Budne  
Douglas Bumpus II  
Paul Cameron, Jr  
Elizabeth Cannon  
Rosemary Cardello-Letch  
Dorothy Carlo  
Linda Carrabba  
Brenda Carroll  
Diane Carter  
Robert Case  
Osia Case  
Sean Caughey  
Dr. Lenny Cavallaro  
Kathleen Cerruti  
John Cevasco  
Tanya Champagne  
Katy Chapdelaine  
Mary Chapin  
Cynthia Chapman  
Kathy Chapman  
Stephen Charkoudian  
Joy Chesna  
Jennifer Cheyne  
Jane Chrisfield  
Vicki Citron  
C.G. Clark  
Beth Clark  
Holly Clarke-McAlary  
Stewart Clifford  
Kate Cloud  
Rachael Cobb  
Megan Coffey  
Karen Coffey  
Bruce Cohen  
Calvin Cohen  
Donna Cohen  
MLM Cohn  
Jill Coleda  
Dave Conna  
Kathleen Connelly  
Janine Connors  
Michelle Conville  
Margaret Cooney  
Brock Cordeiro  
Shielding Cournoyer

Barbara Cowan  
Ken Craft  
Anni Crofut  
Mary Cushing  
Amy Cusick  
Graham Daly  
Lisa D'Ambrosio  
Scott Darlington  
Caroline Darst  
Sheila Datz  
Ariannah De Avalon  
James De Crescentis  
Barry De Jasu  
Elizabeth De Rham  
John Deal  
Athena DeGangi  
Constance Del Nero  
Fran Delaney  
Robert Dellelo  
Joseph G. DeMarco  
Dennis DeMarinis  
Kathryn Deputat  
Judy Desreuisseau  
Jordan Desrosier  
Arlene Devlin  
Adriana Di Cecco  
Daniel Dick  
Dirck Dimock  
Joshua Dobbelaar  
Debbie Dominguez  
Tammy Donahue  
Stephen Donnelly  
Thomas Dorsey  
Patricia Doucette  
Marguerite Doyle  
Jim DuBois  
Gretchen H. Duffield  
Patricia Duffy  
Victoria Dunch  
Nancy Dunkly  
Stephen Dunne  
Donald Edwards  
Cynthia Eggert  
Devera Ehrenberg  
Alfred Eipper  
Margot Eiran



Leslie Elliott  
Ted Ennis  
Karen Erikson  
Steve Esposito  
Sara Espowood  
Sherryl Falvey  
Ron Farnsworth  
Thomas Fazio  
David H. Fekay  
Christine Felice  
Jesseca Ferguson  
Joanne Fernandes  
Heidi Fessenden  
Lawrence Fine  
John J. Fitzgerald  
Terri Fitzpatrick  
Gail Flackett  
Robert L. Foley Jr  
Judi Fonsh  
Patricia Force  
Heidi Foubare  
Suzanne Freeman  
Luis Freire  
Robert French  
John Frey  
Paul Frongillo  
L. Fuller  
Rena Mae Gagnon  
Katharine Galaitsis  
Mary Galgay  
Dan Gallagher  
Melissa Gallivan  
Heather Garbacik  
Patsy Gardner  
Paul D. Garmon  
Mark Gates  
John Gau  
Michael Gaunt  
Rebecca Gavin  
Beth Gehman  
Michael Gelineau  
Elizabeth B. Gerlach  
David Gerratt  
Conrad Geyser  
Inca Ghosh  
Andrea Gibson

Robert Gilstein  
Deborah Giniewicz  
Lisa Giusti  
Leslie Glendye  
Ruth Glotzer  
Adrienne Goeller  
Juliane Goicoechea  
Joel Golden  
Jon Goldman  
Julie Goodman  
Joel Gordon  
Lysistrata Gowrinathan  
Kristy Graf  
David Grant  
Gail Gray  
Robert Greeney  
Michael Gregory  
Arjuna Greist  
Susan Grimwood  
Steve Gross  
Lois Grossman  
Mary Hadcock  
Amy Hahn  
David Hall  
William Hall  
Phyllis Halpern  
Randy Hammer  
Bill Hanigan  
Leo Hannenberg  
Jane Hardy  
Kay Hartnett  
Wesley Hartwell  
Nancy Hazard  
Deirdre Healy  
B.J. Herbison  
John Hess  
James Hess  
Ann Hicks  
Scott Hildebrandt  
Ziporah Hildebrandt  
Jamie Hill  
David Hobbs  
Suzanne Hodes  
Mark Hodgson  
Mary Hoffmann  
Emily Hogan

Dean Holden  
Robert R. Holt  
Ann Holzgraf  
Tara Horeluk  
Janet R. Hose  
Cornelia Hoskin  
Helenmary Hotz  
Alexandra Houck  
Holiday Houck  
Donna Houghton  
Sylvia Houghton  
Ryan Houlette  
Tim House  
Bryan Howcroft  
Jim Hunt  
Arthur Huston  
Christine Hutchins  
Kimberly Hutchins  
Leo Immonen  
Harry Irwin  
Judith R. Izatt  
George Jackman  
Kristin Jackson  
Marie-Louise Jackson-Miller  
Barbara Jacobskind  
Albert S. Jacobson  
Andrew Janjigian  
William Jastromb  
Jason Jay  
Grace Jeromski  
Brian Jewett  
Mindy Johnson  
Robert Jokela  
Margaret Jones  
Wendy Jones  
Sarah Joslin  
Peter Kahn  
Mike Kantrowitz  
Tangie Kapise  
Dave Karasic  
Michael Karmazin  
Stephen A. Kasnet  
Leonard Katz  
Doreen Kelly  
Karen Kennedy

Michael Kennedy  
Deborah Kerr  
Barry Kesselman  
Jonas Ketterle  
Chris Kiely  
Jessie Kijowski  
Kathleen King  
Maxine Kingsbury  
Thomas Klein  
Roderick Klinger  
Stephen Knowlton  
Barbara Kohin  
Mike Kolker  
Marilyn.I. Kolodney  
Christina Kowalewski  
Harold Kramer  
Marin Kress  
Jeanne Krieger  
Robert Kuljian  
Michael LaBonte  
Danelle Laflower  
Romeo Lafond  
Sarah Lais  
Molly Lamb  
Francoise LaMonica  
David Landskov  
Glenna Lang  
John Langton  
Walker Larsen  
Patricia Larson  
Annie Laurie  
Robbie Lauter  
Robert LeCates  
John Leclerc  
Susan Lee  
Margaret Lee  
Esther Lee  
Walter Lee  
Adrian Lee  
Morris Leibovitz  
Matt Levin  
Robert Levin  
Ellen Levine  
Kathleen Lewis  
Lex Lim  
Josh Linder

Zenos Linnell, M.D.  
Daniel Lippman  
Robert Lipton  
Richard Lipton  
Gamaliel Lodge  
Chris Logan  
Richard Lombard  
James Lovatt  
Nancy S. Lovejoy  
Pelle Lowe  
Peter Lundell  
Lois Lundell  
Henry Lyman  
Frances Lynch  
John MacDougall  
Bob Machaver  
Kathleen Malley-  
Morrison  
Stephanie Maloney  
Patricia Maloney-Brown  
Glenn Maltais  
George Mandler  
Jessica Manganello  
Jane Manring  
Steven Manwell  
Amy Sophia Marashinsky  
William Marion  
Christine Marquez  
Philip Marrone  
Robert Mathews  
Anne Mazar  
Brenda McCarthy  
Patricia McCormick  
Margaret McDaniel  
Damian McDonnell  
Seth McElhinney  
Robert McGowan  
Tara McGrath  
Dennis McKinstry  
Michael McLellan  
A. Dale McMullan  
Elizabeth McTiernan  
Elizabeth Medeiros  
Paleidia Melanson  
Sophia Mendelsohn  
Linda Mendez

Marcia Merithew  
Judi Merl  
Leigh Merlini  
Sarah Metcalf  
Phyllis Miller  
Lesley Miller  
Marlyn Miller  
Jeffrey Miner  
Joseph Minton  
William F. Mock  
Emily Monosson  
Chris Moran  
Francoise Moros  
Janette Morrell  
Steven Morrill  
Beth Moser  
Philip Moss  
Stephanie Muir  
Roberta Mulcahy  
Kirk Mumford  
Peter Murdoch  
Erin Murphy  
Lauri Murphy  
Ray Nassar  
Christopher Nawrocka  
Carol Nealy  
Erin Nelson  
Joshua Nicholson  
Terrence Nicholson  
Barbara Nill  
Alan J Nishman  
Nancy Nolan  
Frances Nolde  
Elizabeth Nollner  
Cynthia Norris  
Clayton Novak  
Trina Novak  
Rayleen Nunez  
Sander Nydick  
Shawn O'Brien  
John O'Brien  
Thomas Olbert  
Martha Olver  
Susan Oman  
Mary Ellen Osowski  
Shayne Osterberg

Dan Osterman  
Lynn Pallotta  
Catherine Palmer  
Alice Paquette  
Augustin Parker  
Eric Parker  
Thamas Paterson  
Colin Laird Patten  
Charles Paxson  
Richard Payne  
Trinity Peacock-Broyles  
Michelle Pearl  
Valerie Peck  
Jay Pendexter  
Lesley Pereira  
Al Perreault  
Doane Perry  
Phil Person  
John Petersson  
Gerol Petruzella  
Christopher Picone  
Bruce Pieroni  
Linda Pike  
Debra Pinkham  
Marlana Pitas  
Katherine Plucinski  
Ellen Podolsky  
Jared Polens  
Fred Pomerantz  
Geoffrey Pope  
Daisy Powell  
Laura Punnett  
Elaine Radiss  
Danuta Radko  
Diane Rappa  
Seth Read  
Kathleen Reine  
Kathleen Remaly  
Will Rice  
Margaret Richardson  
Emily Rideout  
Clare Ritchie  
Eric Robinson  
Virginia Robinson  
Linda Rock  
Derrick Rockosi

Dennis Rogers  
Daniel Romeo  
Christopher Roof  
Richard Roos  
Judith Rosen  
Alexia Rosoff  
Kurt Roth  
Mortimer Roth  
Veronica Rough  
Kimberly Roy  
Joe Roy  
Richard Rubinstein  
Hans Ruecker  
Vanessa Rule  
Kia Ruscansky  
Adele Rustino  
Laurel Ruzicka  
Joan Sadowski  
Jeffrey Saeger  
Mark Salamon  
Linda Shepard Salzer  
Brian Sant  
David Santos  
Paul Santos  
Pamela Sartori  
Andrea Saunders  
Joan Sawyer  
H Schaktman  
Sunessa Schettler  
Sandra Schieferl  
George Schneider  
Cheryl Schnitzer  
Audrey Schulman  
Janet Scott  
Elizabeth Seelman  
Stephanie Selznick  
Lisa Shaftel  
Garth Shaneyfelt  
Michael Shapiro  
Robyn Sharpe  
Ed Shedd  
Charles Shimooka  
Michael Shirley  
Steve Shoap  
Gary Shostak  
Patricia A. Sikora

Louise Silver  
Olga Simek  
Debra Simes  
Kathy Simmonds  
Kathleen Simmons  
Erin Simmons  
Vivienne Simon  
Vicky Singer  
Sara Skinner  
Naomi Slagowski  
Robyn Sliney  
Joel Slocum  
Heidi Smith  
Kevin Smith  
Anne Smith  
Nancy Smith  
Melissa Snitzer  
Gregory Sorozan  
Suzanne Spadola  
Marco Spagnol  
David Spanagel  
Ruth Spaulding  
Carole Spear  
Charles Spitzer  
Suzanne Stark  
Lorraine Stepchin  
Daphne T Stevens  
Karen Steward  
Cynthia Stewart  
Carolyn Stock  
Kim Stone  
Charles Strader Jr.  
David Strong  
Michael Stuart  
Lawrence Sullivan  
Lawrence Sullivan  
Nancy Sullivan  
Donna Sullivan-Pontz  
Russell Swan  
Lisa Symonds  
David Tarbell  
Lisa Taylor  
J. Kenneth Taylor  
William Taylor  
Donald Tebaldi  
Sarah Tenney

Susan Teshu  
Karen Themelis  
Diana Thoenen  
Leslie Thomas  
Joanne Thompson  
Kirby Thwing  
Carmine Tocci  
Nan Tremblay  
Nancy Tremblay  
Robin Tremblay-Costello  
Brenda Troup  
Larry Trust  
John Tucker  
Donna Tucker  
Jeffrey Turner  
Richard Vaillette  
Carole Vajames  
Cheryl Vallone  
Eric Van Bean  
Timothy Van Egmond  
Nick Van Nes

Nicole Vanasse  
Yvonne Vecchia  
Margaret Vickery  
Alexander von Hoffman  
Darlene Wadden  
Linda Waine  
Erika Walleston  
Dennis Walsh  
Adriaan Walther  
Irene Walworth  
Elena Wang  
Jon Warcup  
Cindy Warner  
Alex Weiland  
Sherry Weiland  
Benjamin Weiner  
David Weinstein  
Lee Weinstein  
Carol Weis  
Russell Weiss-Irwin  
Leah Wessner

Elizabeth Westie  
Joanne Wheeler  
Babette Whipple  
Margaret Whittemore  
Kelly Wilbur  
Sally Williams  
Shirley Winer  
Jessica Wolin  
Sharon Wong  
Audrey Wyatt  
Alec Wysoker  
Andrea Yakovakis  
Jim Zahakos  
Linda Zaitlin  
Mary Zawoysky  
David Zeutas-Broer  
Arnold Zieff  
Wendy Ziesemann  
Marc Zimmerman  
Nicholas Zinser